



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,561	03/02/2004	Igor Y. Botvinnik	112440-723	3286
29190 7590 02/13/2008 BELF., BOYD & LLOYD LLP P.O. BOX 1135 CHICAGO, IL 60690				
EXAMINER MAYEKAR, KISHOR				
ART UNIT 1795		PAPER NUMBER		
MAIL DATE 02/13/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/791,561

Applicant(s)

BOTVINNIK ET AL.

Examiner

Kishor Mayekar

Art Unit

1795

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 3/04 & 10/05
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the references as disclose in paragraphs 1 and 60 are not updated.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 9-17, 22, 26, 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 4,789,801) in view of Applicant's admission. Lee's invention is directed to an electrokinetic transducing method and apparatus. Lee discloses in Fig. 3 that the electrokinetic transducer for use in electrostatic precipitators and electric fans comprises an emitter electrode 60', a collector electrode 58', a driver electrode 62' located at least partially within an interior of the collector electrode, and a high voltage

source 12 for providing a voltage potential to the emitter and collector electrode. The difference between Lee and the above claims is the provision that the emitter electrode is a pin emitter electrode and/or the collector electrode is a ring collector electrode. However, Applicant admits in paragraph 7 and Fig. 3 that a pin-ring type system is known. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Lee's admitted by Applicant because this would result in electrostatic precipitator with a particle collecting efficiency and air flow rate without a constrained space.

As to the subject matter of each of claims 2, 5, 12, 15, 16 and 30, Lee discloses it in Fig. 3.

As to the subject matter of each of claims 3, 4, 16, 17, 28 and 29, since it is related to a method of operating the system, it cannot be given any patentable weight.

As to the subject matter of each of claims 9-11 and 14, it is shown in Applicant's admission's Fig. 3.

4. Claims 3, 4, 6, 16-18, 23-25 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee '801 as modified by Applicant's admission as applied to claims 1, 2, 5, 9-15, 22, 26 and 30 above, and further in view of Natarayan et al. (US 4,264,343). The difference between the references as applied above and the instant claim is the provision of the driver electrode being insulated. Natarayan teaches in an electrostatic particle

Art Unit: 1795

collecting apparatus (electrostatic precipitator) the provision that of an electrode located between a pair of collector electrodes is insulated with a layer of a dielectric material (Fig. 16; abstract; and paragraph crossing cols. 7 and 8). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as suggested by Natarayan because this would result in preventing sparking or arcing between the collector electrodes and the electrode located between the collector electrodes.

As to the subject matter of each of claims 3, 4, 16 and 17, Natarayan further teaches that different configurations or connections of the polarities of all the electrodes.

As to the subject matter of claims 24 and 25, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings because it has been settled that proper adjustment of a known effective variable of a known or obvious process is within the capabilities of one having ordinary skill in the art. *In re Aller* 105 USPQ 233; *In re Boesch* 205 USPQ 215.

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee '601 in view of Applicant's admission and Natarayan '343 as applied to claims 1-6, 9-18 and 22-30 above, and further in view of Weinberg (US 6,042,637). Lee as applied above

Art Unit: 1795

further discloses that his improved system produces less ozone (paragraph crossing cols 1 and 2). The difference between the references as applied above and the instant claims is the provision of ozone reducing catalyst. Weinberg teaches in an air ionizer the provision of a catalyst for reducing the emission of ozone (paragraph crossing cols. 3 and 4). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as suggested by Weinberg because if the emission of ozone is high the provision of an ozone reducing catalyst would further reduce the ozone emission. Further, the motivation to make a specific structure is always related to the properties or uses one skilled in the art would expect the structure to have, *In re Newell* 13 USPQ 2d 1248, *Fromson v. Advance Offset Plate* 225 USPQ 26; *In re Gyurik* 201 USPQ 552.

6. Claims 19-21, 31 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee '801 in view of Applicant's admission and Natarayan '343, for the same ground of rejection as set forth in paragraph #4 above.

7. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee '801 as modified by Applicant's admission and Natarayan '343 as applied to claims 19-21, 31 and 34-36 above, and further in view of Krause (US 6,056,808). The further difference between the references as applied above and the instant claims is the provision of a fan.

Art Unit: 1795

Krause teaches the optional use of a fan in an ion wind air cleaning apparatus (col. 3, lines 36-42). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as suggested by Sakakibara because this would result in a kinetic transducer with a fan for the moving of air.

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee '801 as modified by Applicant's admission and Natarayan '343 as applied to claims 19-21, 31 and 34-36 above, and further in view of Satyapal et al. (US 5,879,435). The further difference between the references as applied above and the instant claims is the provision of a lamp for reducing the amount of microorganisms in air. Satyapal teaches the above limitation in an air ionizer (see abstract). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as suggested by Satyapal because this would result in a complete air cleaning.

9. Claims 37-39, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee '801 as modified by Applicant's admission and/or Natarayan '343 and Krause '808. The further difference between Lee in view of Applicant's admission and/or Natarayan is the provision that the recited freestanding housing. Krause as applied above that the

Art Unit: 1795

apparatus can be used as a stand alone unit (col. 3, lines 36-42). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as suggested by Krause because this would result in stand alone unit (portable unit) ready to be plugged into a wall socket.

10. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee '801 as modified by Applicant's admission and/or Natarayan '343 and Krause '808 as applied to claims 37-39, 41 and 42 above, and further in view of Satyapal '435. The further difference between the references as applied above and the instant claims is the provision of a lamp for reducing the amount of microorganisms in air. Satyapal teaches the above limitation in an air ionizer (see abstract). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as suggested by Satyapal because this would result in a complete air cleaning.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kishor Mayekar/
Primary Examiner, Art Unit 1795